Source Water Assessment Program (SWAP) Report
For
Old Colony Regional Vocational Technical School

Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program

Date Prepared:
March 20, 2001

Table 1: Public Water System (PWS) Information

PWS NAME	Old Colony Regional Vocational Technical School
PWS Address	476 North Avenue
City/Town	Rochester, MA
PWS ID Number	4250003
Local Contact	Thaomas Reznekervitz
Phone Number	(508) 763-8011 extension 115

Well Name	*Source ID#*	*Zone I (in feet)*	*IWPA (in feet)*	*Source Susceptibility*
Well #1	4250003-01G	300	879	HIGH

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

? inventory land uses within the recharge areas of all public water supply sources;
? assess the susceptibility of drinking water sources to contamination from these land uses; and
? publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

INTRODUCTION

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential contaminant sources, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential contaminant sources, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:
1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

The well for the Old Colony Regional Vocational Technical School is a public water supply currently serving a population of 535 students and 98 teaching staff. The well for the Old Colony Regional Vocational Technical School is located in a below ground concrete vault east of the school. The well is 8 inches in diameter and is drilled to a depth of 250 feet. The well is located in a wooded area adjacent to the rear parking lot. Well #1 has a Zone I of 300 feet and an Interim Wellhead Protection Area (IWPA) of 879 feet. Please refer to the attached map of the Zone I and IWPA. The well is located in a bedrock aquifer with a high vulnerability to contamination due to the absence of a hydrogeologic barrier that can prevent contaminant migration. Emergency power is provided by a natural gas powered generator.

A sump pump and a heater were added to the concrete well vault during the year 2000. A crack in the well's concrete seal was repaired to prevent surface water and ground water

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.

- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

infiltration.

The well serving the facility has no treatment at this time. For current information on monitoring results, please contact the Public Water System contact person listed above in Table 1.

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination. The buildings and grounds staff are commended for the actions they took to protect the water supply subsequent to the SWAP site visit. In a February 8, 2001 letter to the Department, the buildings and grounds staff indicated they have sealed the floor drain, labeled the waste oil tank, and prepared maintenance log sheets for the floor drain, oil/water separator and holding tank associated with the automotive garages. Additionally, staff has indicated they will solicit quotes for secondary containment for the two aboveground storage tanks.

Key issues include:

1. **Inappropriate activities in Zone I.**
2. **A 200-gallon AST for No. 2 diesel fuel and floor drain in IWPA.**
3. **Hazardous waste/materials storage in the IWPA.**
4. **Potential discharge of Industrial Wastewater to the septic system.**
5. **Floor drain connected to an Underground Storage Holding Tank (UST).**
6. **Aboveground Storage Tank (AST) for waste oil in IWPA.**

The overall ranking of susceptibility to contamination for the well is High, based on the presence of at least one High threat land use or activity in the IWPA, as seen in Table 2.

1. **Zone I**– The school owns all the land encompassed by the Zone I. However, the well does not meet DEP's restrictions, which only allow water supply related activities in Zone Is. The facility's Zone I contains parking areas for approximately 40 vehicles. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems. The storm water for the parking lot located in the Zone I is directed away from the well through two (2) catch basins on the northeast and southeast corners of the parking lot. The two-(2) catch basins are interconnected by a pipe which routes storm water approximately 200-300 feet to the north-northeast of the parking lot to a wooded area. Based on the site visit conducted during the SWAP assessment it

Table 2: Table of Activities within the Water Supply Protection Areas

Facility Type	Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
School	Underground Storage Tank and Floor Drain	No	Yes	High	Holding tank for floor drains in automotive shop garage
~~School~~	~~Floor Drain~~	No	~~Yes~~	~~High~~	Floor Drain has been sealed
School	Storage/use of oil & hazardous materials	No	Yes	High	Hazardous waste/materials storage
School	Parking lot, driveways & roads	Yes	Yes	Moderate	No road salt usage in Zone I and storm water drainage is away from well
School	Athletic Field and structures	No	Yes	Moderate	Fertilizer and Pesticide use
School	Septic System	No	Yes	Moderate	Refer to septic systems brochure in the attachments
School	Fuel Storage Above Ground	No	Yes	Moderate	Waste oil tank and 200 gallon diesel Tank without secondary containment
Residence	Septic systems, heating fuel storage, lawncare, gardening	No	Yes	Moderate	6 residences

*** -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.**

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

appeared some stormwater infiltrated at the two-(2) catch basin locations. During heavy rainfall events the storm water which did not infiltrate at the two-(2) catch basin locations was discharged to the north-northeast of the parking lot. All catch basins and storm water drains are checked, cleared and maintained on a regular basis by the grounds keeping staff at the facility. According to school staff road salt is not used on the parking area located within the Zone I.

Recommendations:

- Keep non-water supply activities out of the Zone I. Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements. Please note that water systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying their system.
- Continue to inspect and maintain catch basins and storm water structures for the parking lot located in Zone I.

2. **The Maintenance Building: Aboveground Storage Tank and Floor Drain-**a # 2 diesel 200 AST without secondary containment is located in the maintenance garage within the IWPA. Aboveground storage tanks in your IWPA should be located on an impermeable surface, and also contained in area large enough to hold the complete liquid volume, should a spill occur. Any modifications to the AST must be accomplished in a manner consistent with Massachusetts's plumbing, building, and fire code requirements. The Department recommends that you consult with the local fire department for any additional local code requirements regarding AST. If you need to store fuel to power pumps, the drinking water program recommends that you consider using alternative fuels, such as natural gas or propane.

Recommendation implemented:

In a Feb. 8, 2001 letter to the Department, buildings and ground staff indicated that they would solicit quotes for secondary containment for the diesel tank for the 2003-operating budget.

A floor drain was observed within the maintenance building during the site visit. The floor drain in the maintenance building is a concern due to the storage of diesel fuel AST, gasoline, fertilizer, pesticides, vehicle storage and other chemical storage.

Recommendation implemented:

In a February 8, 2001 letter to the Department, the buildings and grounds staff indicated the floor drain has been subsequently sealed to comply with the Department's regulations regarding Underground Injection Control (UIC).

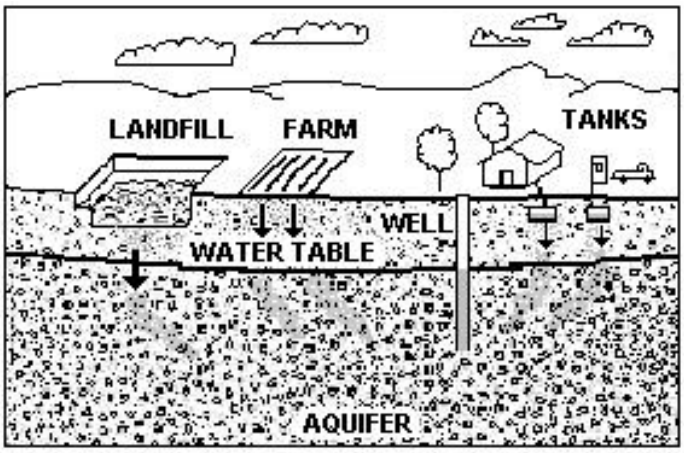

Figure 1: Example of how a well could become contaminated by different land uses and activities.

3. **Hazardous Materials/Waste –** Hazardous materials as well as hazardous waste generated at the school is stored in a building (in close proximity to the maintenance garage) which is located approximately 400 feet from the well. A hazardous waste disposal contractor is hired to dispose of hazardous waste that accumulates.

Recommendation:

- The school is currently not registered as a generator of hazardous waste or waste oil. Review enclosed document "A SUMMARY OF REQUIREMENTS FOR SMALL QUANTITY GENERATORS OF HAZARDOUS WASTE" to determine your status and regulatory requirements. Enclosed is a registration form for you to fill out and return to the Department.

4. **Industrial Wastewater**- Discharge from photographic, art, science, and vocational classrooms is required to go to a

For More Information:

Contact Mark Dakers in DEP's Lakeville Office at (508) 946-2847 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on DEP's web site at: www.state.ma.us/dep/brp/dws.

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been provided to the public water supplier, town boards, the town library and the local media.

tight tank or sewer.

Recommendation:

- Eliminate non-sanitary wastewater discharges (no discharge of industrial wastewater to sink) to on-site septic systems.

5. **Floor Drain, oil water separator and Underground Storage Tank** - A floor drain was observed within the automotive repair garages within the IWPA. The floor drains lead to an oil water separator that is connected to a 2000 gallons UST holding tank. The holding tank has an active alarm at 60 percent capacity and is located approximately 600 feet from the well. Automotive repair and maintenance occurs in the garages. An UST in the IWPA is a concern due to the potential threat posed by the release of its contents if managed improperly.

   By their nature oil/water separators require regular maintenance. If not properly maintained they fail to function as intended and may cause significant problems. The frequency of the maintenance will depend on the particular facility. Maintenance plans should identify owners, parties responsible for maintenance, and an inspection and maintenance schedule. The Department recommends that a monitoring log detailing inspection and maintenance of the oil water separator be kept on the premises. At a minimum, inlets should be inspected and cleaned out four times per year and inspected monthly. Please note the recommendations, noted above; do not supersede any conditions imposed by the Board of Health.

   Recommendation implemented:

   Subsequent to the SWAP site visit, the buildings and grounds staff has developed preventative maintenance plan and log sheets.

6. **Aboveground Storage Tank –** A waste oil AST is located inside the automotive repair garages within the IWPA. The waste oil tank should be labeled clearly (refer to attachment "A SUMMARY OF REQUIREMENTS FOR SMALL QUANTITY GENERATORS OF HAZARDOUS WASTE").

   Recommendation implemented:

   The waste oil tank has been labeled, as noted in the Feb. 8, 2001 correspondence from the buildings and grounds staff.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the well's susceptibility to contamination. The Old Colony Regional Vocational Technical School is commended for its current protection measures. The Old Colony Regional Vocational Technical School should review and adopt the **key** recommendations above and the following recommendations.

The Zone I:

- Continue to prohibit public access to the well and pumphouse by locking facilities and posting signs.
- Continue to conduct regular inspections of the Zone I. Look for illegal dumping, evidence of vandalism, check any above ground tanks for leaks, etc.
- Continue not using or storing pesticides, fertilizers or road salt within the Zone I.

Training and Education:

- For additional help regarding environmental requirements and toxic use reduction approaches to compliance contact the Office of Technical Assistance for Toxic Use Reduction (OTA) reduce the use of toxic materials and reduce or eliminate omissions of toxic byproducts. The OTA) is a nonregulatory agency within the Commonwealth's executive office environmental affairs. OTA provides free, confidential assistance on toxic use reduction opportunities (Refer to attachment for additional information).
- Train staff on proper hazardous material use, disposal, emergency response, and Best Management Practices; include custodial staff, groundskeepers, certified operator, and food preparation staff.

- Post drinking water protection area signs at key visibility locations.

Facilities Management:

- Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. To learn more, see the hazardous materials guidance manual at www.state.ma.us/dep/brp/dws/dwspubs.html..
- Upgrade all oil/hazardous material storage tanks to incorporate proper containment and safety practices.
- Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.
- Septic system components should be located, inspected, and maintained on a regular basis. Refer to the appendices for more information regarding septic systems.
- Concrete pads should slope away from well and well casing should extend above ground.
- For utility transformers that may contain PCBs, contact the utility to determine if PCBs have been replaced. If PCBs are present, urge their immediate replacement. Keep the area near the transformer free of tree limbs that could endanger the transformer in a storm.

Planning:

- Work with local officials in Rochester to include the schools IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.
- These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

The Department's Wellhead Grant Protection Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the 2001 "Wellhead Protection Grant Program". For additional information please refer to the attached program fact sheet for 2001 (Please note each program year the Department posts a new Request for Response for the Grant program (RFR)).

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Wellhead Protection Tips for Small Public Water Systems
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure
- Pesticide Use Factsheet
- Industrial Floor Drains Brochure
- Summary of Requirements for Small Quantity Generators of Hazardous Waste
- Massachusetts Department of Environmental Protection-Generator Registration
- Healthy Schools Fact Sheet
- Chemical Management and Other Environmental, Health and Safety Issues in Schools
- Recycled and Environmentally Preferable Products and Services Guide for Commonwealth of Massachusetts State Contracts
- Wellhead Protection Grant Program Fact Sheet
- Source Protection Sign Order Form
- OTA pamphlet